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Search Results - Record(s) 1 through 13 of 13 returned.

☐ 1. Document ID: US 5929639 A Relevance Rank: 99

Using default format because multiple data bases are involved.

L1: Entry 8 of 13 File: USPT Jul 27, 1999

US-PAT-NO: 5929639
DOCUMENT-IDENTIFIER: US 5929639 A

TITLE: Non-dipolar RF coil for NMR lock and homonuclear decoupling

DATE-ISSUED: July 27, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Doty; F. David	Columbia	SC		

US-CL-CURRENT: 324/318; 324/309, 324/311, 324/313, 324/322, 600/422

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 2. Document ID: US 6369570 B1 Relevance Rank: 94

L1: Entry 7 of 13 File: USPT Apr 9, 2002

US-PAT-NO: 6369570
DOCUMENT-IDENTIFIER: US 6369570 B1

TITLE: B1 gradient coils

DATE-ISSUED: April 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wong; Wai Ha	San Jose	CA		
Sukumar; Subramaniam	Union City	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Varian, Inc.	Palo Alto	CA			02

APPL-NO: 09/747818 [PALM]
DATE FILED: December 21, 2000

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/320, 324/307
US-CL-CURRENT: 324/318; 324/307, 324/320

FIELD-OF-SEARCH: 324/318, 324/319, 324/320, 324/307

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4694555	September 1987	Hayes	324/318
4757290	July 1988	Keren	324/318
5323113	June 1994	Cory et al.	324/318
5642048	June 1997	Crozier et al.	324/318
5680046	October 1997	Frederick et al.	324/318
5898306	April 1999	Liu et al.	324/322
5990681	November 1999	Richard et al.	324/322
6043658	March 2000	Leussier	324/318
6133737	October 2000	Greim	324/318

OTHER PUBLICATIONS

Article by Vullo, et al., entitled "Experimental Design and Fabrication of Birdcage Resonators for Magnetic Resonance Imaging", published in Magnetic Resonance in Medicine, vol. 24, pp. 24-252 (1992).

ART-UNIT: 2862

PRIMARY-EXAMINER: Williams; Hezron

ASSISTANT-EXAMINER: Vargas; Dixomara

ATTY-AGENT-FIRM: Bella Fishman

ABSTRACT:

A birdcage-like coil with a pair of electrically conductive ring elements separated in a longitudinal direction and interconnected by three longitudinally extending electrically conductive elongated strips, two of which are diametrically oppositely disposed and the third is azimuthally at 90E from both of them, can create an RF magnetic field gradient when driven in a certain resonance mode. A similarly structured birdcage-like coil with a fourth strip to have two diametrically oppositely disposed strips can create two switchable orthogonal magnetic field gradient by switching off a selected one of the strips and driving the coil in a certain mode. A coil for generating alternative a homogeneous field and selectably one of two orthogonal gradient fields is formed by sandwiching a prior art birdcage long-pass coil with a pair of such coils and by switching on and off suitable ones of the switches in the strips.

15 Claims, 9 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw. D

☐ 3. Document ID: US 6696838 B2 Relevance Rank: 94

L1: Entry 3 of 13 File: USPT Feb 24, 2004

US-PAT-NO: 6696838
DOCUMENT-IDENTIFIER: US 6696838 B2
** See image for Certificate of Correction **

TITLE: Nuclear magnetic resonance analysis of multiple samples

DATE-ISSUED: February 24, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Raftery; Daniel	Lafayette	IN		
Fisher; George G.	Oak Harbor	WA		
McNamara; Ernesto	Alexandria	VA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Purdue Research Foundation	West Lafayette	IN			02

APPL-NO: 09/938996 [PALM]
DATE FILED: August 24, 2001

PARENT-CASE:
CROSS-REFERENCE TO RELATED APPLICATIONS The present application claims the benefit of U.S. Provisional Patent Application No. 60/121,869, filed Feb. 26, 1999, which is hereby incorporated by reference in its entirety; and is a continuation of International Patent Application No. PCT/US00/04842 filed Feb. 25, 2000 and published in English Aug. 31, 2000.

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/321; 324/318, 324/322, 324/310
US-CL-CURRENT: 324/321; 324/310, 324/318, 324/322

FIELD-OF-SEARCH: 324/321, 324/318, 324/309, 324/307, 324/310, 435/7.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4633181	December 1986	Murphy-Boesch et al.	

4654592	March 1987	Zens	
4691162	September 1987	Van Uijen	
4742304	May 1988	Schnall et al.	
4871969	October 1989	Roemer et al.	
5086275	February 1992	Roemer	
5146166	September 1992	Bartuska	
5236239	August 1993	Govang et al.	
5237276	August 1993	Cory	
5323113	June 1994	Cory et al.	
5585723	December 1996	Withers	
5654636	August 1997	Sweedler	
5760586	June 1998	Foerster et al.	
5818231	October 1998	Smith	
5872452	February 1999	Cory et al.	
5905378	May 1999	Giaquinto et al.	
5914599	June 1999	Sharp	
5926023	July 1999	De Groot et al.	
5929639	July 1999	Doty	
5986453	November 1999	Anderson et al.	
6504368	January 2003	Ross et al.	324/307
2001/0024796	September 2001	Selifonov et al.	435/7.1
2001/0045831	November 2001	Ross et al.	324/307
2002/0130661	September 2002	Raftery et al.	324/318

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James S. Hyde, A Jesmanowicz, W. Froncisz, J. Bruce Kneeland, Thomas M. Grist, and Nicholas F. Campagna; "Parallel Image Acquisition from Noninteracting Local Coils"; Journal of Magnetic Resonance; Milwaukee, Wisconsin; Aug. 8, 1986.
Nian Wu, Timothy L. Peck, Andrew G. Webb, Richard L. Magin, and Jonathan V. Sweedler; ".sup.1 H-NMR Spectroscopy on the Nanoliter Scale for Static and On-Line Measurements"; Analytical Chemistry, vol. 66, No. 22; University of Illinois at Champaign-Urbana, Illinois; Nov. 15, 1994.
Dean L. Olson, Timothy L. Peck, Andrew G. Webb, Richard L. Magin and Jonathan V. Swedler; High-Resolution Microcoil .sup.1 H-NMR for Mass-Limited, Nanoliter-Volume Samples; Science, vol. 270; Dec. 1995.
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Y. Li, A.M. Wolters, P.V. Malawey, J.V. Sweedler, and A.G. Webb; "Multiple Solenoidal Microcoil Probes for High-Sensitivity, High-Throughput Nuclea Magnetic Resonance Spectroscopy," Analytical Chemistry, vol. 71, Nov. 1, 1999.
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Samples," Journal of Magnetic Resonance, vol. 138, 1999, pp. 160-163.
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Fast Acquisition of NMR Spectra on Multiple Samples," Angew. Chem. Int. Ed., vol. 40, No. 17, 2001, pp. 3243-3245.
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ART-UNIT: 2859

PRIMARY-EXAMINER: Gutierrez; Diego

ASSISTANT-EXAMINER: Fetzner; Tiffany A.

ATTY-AGENT-FIRM: Bahret; William F.

ABSTRACT:

A Nuclear Magnetic Resonance (NMR) probe device (20) is disclosed. NMR probe device (20) includes a plurality of detection coils (30, 40) each operable to detect a signal from a corresponding one of a plurality of samples (34, 44) undergoing NMR analysis. Also included is a plurality of tuning circuits (31, 41, 38, 48) each coupled to one of detection coils (30, 40) to tune the one of the detection coils (30, 40) to a corresponding resonant frequency for the NMR analysis of the corresponding one of the samples. An electromagnetic shield (22) is positioned between a first one of the detection coils (30, 40) and a second one of the detection coils (30, 40) to isolate the first one of the detection coils (30, 40) and the second one of the detection coils (30, 40) from each other.

22 Claims, 34 Drawing figures

☐ 4. Document ID: US 5323113 A, DE 69411419 E, EP 615134 A1, EP 615134 B1

Relevance Rank: 92

L1: Entry 13 of 13 File: DWPI Jun 21, 1994

DERWENT-ACC-NO: 1994-199639
DERWENT-WEEK: 199838

TITLE: NMR sample probe with B1 gradient coils - generates homogeneous or radial RF field over sample volume and switches between fields using switching mechanism

INVENTOR: CORY, D G; LAUKIEN, F H ; MAAS, W E

PATENT-ASSIGNEE: BRUKER INSTR INC (BRUKN)

PRIORITY-DATA: 1993US-0030693 (March 12, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5323113 A	June 21, 1994		010	G01V003/00
DE 69411419 E	August 13, 1998		000	G01R033/34
EP 615134 A1	September 14, 1994	E	013	G01R033/34
EP 615134 B1	July 8, 1998	E	000	G01R033/34

DESIGNATED-STATES: CH DE FR GB LI CH DE FR GB LI

CITED-DOCUMENTS:02Jnl.Ref; GB 2246636 ; US 5150052

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 5323113A	March 12, 1993	1993US-0030693	
DE 69411419E	March 8, 1994	1994DE-0611419	
DE 69411419E	March 8, 1994	1994EP-0103458	
DE 69411419E		EP 615134	Based on
EP 615134A1	March 8, 1994	1994EP-0103458	
EP 615134B1	March 8, 1994	1994EP-0103458	

INT-CL (IPC): G01 R 33/34; G01 V 3/00

ABSTRACTED-PUB-NO: EP 615134B
BASIC-ABSTRACT:

The NMR sample probe for generating B1 magnetic field gradients in a sample volume from RF energy generated by an RF generator, includes a first Helmholtz coil positioned around the sample volume and having magnetic field generating windings electrically connected so that a homogeneous magnetic field is generated in the sample volume when RF energy is applied to the magnetic field generating windings.

A second Helmholtz coil is positioned around the sample volume and has magnetic field generating windings electrically connected so that a radial magnetic gradient field is generated in the sample volume when RF energy is applied to the magnetic field generating windings. An RF switch is connected between the RF generator and

the first and second Helmholtz coils to allow one of the first and second Helmholtz coils to be connected to the RF generator.

USE/ADVANTAGE - Generating both homogeneous RF field over sample volume or ''radial'' field comprising two orthogonal gradient fields generated simultaneously in transverse plane or linear gradient field.

ABSTRACTED-PUB-NO: US 5323113A
EQUIVALENT-ABSTRACTS:

The NMR sample probe for generating B1 magnetic field gradients in a sample volume from RF energy generated by an RF generator, includes a first Helmholtz coil positioned around the sample volume and having magnetic field generating windings electrically connected so that a homogeneous magnetic field is generated in the sample volume when RF energy is applied to the magnetic field generating windings.

A second Helmholtz coil is positioned around the sample volume and has magnetic field generating windings electrically connected so that a radial magnetic gradient field is generated in the sample volume when RF energy is applied to the magnetic field generating windings. An RF switch is connected between the RF generator and the first and second Helmholtz coils to allow one of the first and second Helmholtz coils to be connected to the RF generator.

USE/ADVANTAGE - Generating both homogeneous RF field over sample volume or ''radial'' field comprising two orthogonal gradient fields generated simultaneously in transverse plane or linear gradient field.

CHOSEN-DRAWING: Dwg.7/8

DERWENT-CLASS: S03 S05 V02
EPI-CODES: S03-E07; S05-D02B1; V02-F01G;

☐ 5. Document ID: US 5323113 A Relevance Rank: 92

L1: Entry 12 of 13 File: USPT Jun 21, 1994

US-PAT-NO: 5323113
DOCUMENT-IDENTIFIER: US 5323113 A

TITLE: NMR probe which includes B1, gradient coils

DATE-ISSUED: June 21, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cory; David G.	Boston	MA		
Laukien; Frank H.	Lincoln	MA		
Maas; Werner E.	Billerica	MA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Bruker Instruments, Inc.	Billerica	MA			02

APPL-NO: 08/030693 [PALM]
DATE FILED: March 12, 1993

INT-CL: [05] G01V 3/00

US-CL-ISSUED: 324/318; 324/307
US-CL-CURRENT: 324/318; 324/307

FIELD-OF-SEARCH: 324/300, 324/307, 324/309, 324/310, 324/311, 324/312, 324/313, 324/314, 324/318, 324/319, 324/322, 128/653.2, 128/653.5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4165479	August 1979	Mansfield	324/313
4549137	October 1985	Suzuki et al.	324/309
4568880	February 1986	Sugimoto	324/309
4899109	February 1990	Tropp et al.	324/320
4978920	December 1990	Mansfield et al.	324/318
5015954	May 1991	Dechene et al.	324/307
5049819	September 1991	Dechene et al.	324/307
5168224	December 1992	Maruizumi et al.	324/300

OTHER PUBLICATIONS

Three-Dimensional NMR Microscopic Imaging of Solids, Botto et al., p. 192, Abstracts 32nd Experimental Nuclear Magnetic Resonance Spectroscopy Conference, Apr. 7-11, 1991.
Two Dimensions of Solid-State Imaging with One RF-Gradient Coil, Werner et al., p. 192, Abstracts 32nd Experimental Nuclear Magnetic Resonance Spectroscopy Conf., Apr. 7-11, 1991.
Advances in Multiple-Pulse Radiofrequency Gradient Imaging of Solids, Werner et al., p. 258, Abstracts 33rd Experimental Nuclear Magnetic Resonance Conference, Mar. 29, 1992-Apr. 2, 1992.
Proton MR Two-Component Chemical Shift Imaging of Fluids in Porous Media, Chang et al., p. 258, Abstracts 33rd Experimental Nuclear Magnetic Resonance Conf., Mar. 29, 1992-Apr. 2, 1992.
Spatial Localization Using a "Straddle Coil", Friedrich et al. Journal of Magnetic Resonance 77, pp. 101-118 (1988).
The Selection of Coherence-Transfer Pathways by Inhomogeneous Z Pulses, Counsell et al., Journal of Magnetic Resonance 64, 470-478 (1985).
Self-Diffusion Measurements Using a Radiofrequency Field Gradient, Diter et al., Journal of Magnetic Resonance 81, pp. 1-12, (1989) (no month).
Improving Magnetic Field Gradient Coils for NMR Imaging, Suits et al., J. Phys E. Sci. Instrum. 22, pp. 565-573, (1989).

ART-UNIT: 267

PRIMARY-EXAMINER: Tokar; Michael J.

ATTY-AGENT-FIRM: Cesari and McKenna

ABSTRACT:

An NMR probe is designed to generate both a homogeneous RF field over the sample volume and, alternatively, a "radial" field comprising two orthogonal gradient fields generated simultaneously in the transverse plane or a linear gradient field. The homogeneous field is generated by means of a known homogeneous coil construction, such as a Helmholtz coil or modified Helmholtz coil. The radial field can be generated by means of an inverted Helmholtz coil, either modified or unmodified, and the linear field can be generated by a Golay type coil, which coils are positioned coaxially with the homogeneous coil. The two coils are connected in parallel to the RF signal generator and switching can be accomplished either by means of an active switch or by detuning one of the coil resonant circuits when the other coil is in use.

16 Claims, 8 Drawing figures

☐ 6. Document ID: US 5655533 A Relevance Rank: 92

L1: Entry 10 of 13 File: USPT Aug 12, 1997

US-PAT-NO: 5655533
DOCUMENT-IDENTIFIER: US 5655533 A

TITLE: Actively shielded orthogonal gradient coils for wrist imaging

DATE-ISSUED: August 12, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Petropoulos; Labros	Cleveland Heights	OH		
Patrick; John L.	Chagrin Falls	OH		
Morich; Michael A.	Mentor	OH		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Picker International, Inc.	Highland Heights	OH			02

APPL-NO: 08/269655 [PALM]
DATE FILED: June 30, 1994

INT-CL: [06] A61 B 5/055

US-CL-ISSUED: 128/653.5; 324/318, 324/322
US-CL-CURRENT: 600/422; 324/318, 324/322

FIELD-OF-SEARCH: 128/653.5, 324/309, 324/318, 324/319, 324/320, 324/322

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4617516	October 1986	Schenck	324/318
4646024	February 1987	Schenck et al.	324/318
4697147	September 1987	Moran et al.	324/309
4737716	April 1988	Roemer et al.	324/319
4794338	December 1988	Roemer et al.	324/318
5036282	July 1991	Morich et al.	324/318
5057777	October 1991	Kurczewski	324/318
5177442	January 1993	Roemer	324/322
5235279	August 1993	Kaufman et al.	324/309
5296810	March 1994	Morich	324/319
5309107	May 1994	Pausch	324/318
5323113	June 1994	Cory et al.	324/318
5343148	August 1994	Westphal et al.	324/309
5372137	December 1994	Wong et al.	128/653.5

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
580324A3	January 1994	EP	
638814A1	February 1995	EP	
2262808	June 1993	GB	

OTHER PUBLICATIONS

"Insertable Asymmetric Cylindrical Gradient Coils", Petropoulos, et al. SMRM Book of Abstracts, V. 2, 11th Annual Scientific Meeting, Aug. 8-14, 1992, p. 4032.
"Actively Shielded Orthogonal Gradient Coils For Wrist Imaging", Petropoulos, et al., Proceedings of SMRM, V. 3, 12th Annual Scientific Meeting, Aug. 14-20, 1993, p. 1309.
"High-Resolution, Short Echo Time MR Imaging of the Fingers and Wrist with a Local Gradient Coil", Wong, et al., Radiology 1991; 181:393-397.

ART-UNIT: 335

PRIMARY-EXAMINER: Casler; Brian L.

ATTY-AGENT-FIRM: Fay, Sharpe, Beall, Fagan, Minnich & McKee

ABSTRACT:

A magnetic resonance imaging apparatus includes main field coils (10) for generating a temporally uniform magnetic field longitudinally through a central bore (12). A whole body gradient magnetic field coil (30) and radio frequency coil (36) are disposed around the bore. An insertable coil assembly (40) includes an insertable gradient coil, a radio frequency coil (74) and a radio frequency shield

(76). The insertable gradient coil includes a pair (62, 64) of x-gradient windings (FIGS. 3 and 4), a pair (66, 68) of y-gradient windings (FIGS. 5 and 6), and a pair (70, 72) of z-gradient windings (FIGS. 7 and 8), which are wrapped around inner and outer surfaces of a dielectric former (60). The x, y, and z insertable gradient coil pairs are configured such that they generate uniform magnetic field gradients within the insertable coil assembly when its central axis is positioned transverse to the direction of the temporally uniform magnetic field generated by the main field coils. The insertable coil assembly is ideally suited for imaging a patient's wrist when the patient rests the insertable coil assembly with its wrist therein on the patient's thorax region transverse to the central bore of the magnetic resonance imaging apparatus.

17 Claims, 8 Drawing figures

☐ 7. Document ID: US 5914599 A Relevance Rank: 92

L1: Entry 9 of 13 File: USPT Jun 22, 1999

US-PAT-NO: 5914599
DOCUMENT-IDENTIFIER: US 5914599 A

TITLE: Compensation for inhomogeneity of the field generated by the RF coil in a nuclear magnetic resonance system

DATE-ISSUED: June 22, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sharp; Jonathan C.	Winnipeg			CA

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
National Research Council of Canada	Ottawa			CA	03

APPL-NO: 08/698269 [PALM]
DATE FILED: August 19, 1996

PARENT-CASE:
This application claims benefit of provisional application No. 60/002,522 filed Sep. 18, 1995.

INT-CL: [06] G01 R 33/00

US-CL-ISSUED: 324/318; 324/309, 324/319
US-CL-CURRENT: 324/318; 324/309, 324/319

FIELD-OF-SEARCH: 324/306, 324/307, 324/309, 324/318, 324/319, 324/314

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4385277	May 1983	Hanley	324/319
4625169	November 1986	Wedeen et al.	324/309
4644473	February 1987	Kojima et al.	324/309
4703274	October 1987	Kaufman et al.	324/309
5023554	June 1991	Cho et al.	324/318
5160888	November 1992	Laukien	324/309
5214381	May 1993	Cory	324/309
5323113	June 1994	Cory et al.	324/318

OTHER PUBLICATIONS

Review Article--Composite Pulses (62 pages).
Review Article--Insensitive Adiabatic RF Pulses (39 pages).
Research Article--Magnetic Field Mapping (6 pages).
Research Article -BIRP, An Improved Implementation of Low-Angle Adiabatic (BIR-4) Excitation Pulses (3 pages).

ART-UNIT: 287

PRIMARY-EXAMINER: Barlow; John

ASSISTANT-EXAMINER: Bui; Bryan

ATTY-AGENT-FIRM: Battison; Adrian D. Thrift; Murray E.

ABSTRACT:

This invention relates to a technique for compensating for the inhomogeneity of the field generated by the RF coil (B1) in a nuclear magnetic resonance experiment. Current techniques for achieving accurate flip angles with non-uniform B1 transmit fields, are based upon modulation of the RF waveform. Inherent disadvantages of any RF-based compensation is an increased pulse length and/or increased RF power. Moreover, for some important applications, e.g. multi-slice excitation, no suitable pulses are known. We present an alternative strategy involving a Bz field whose spatial variation is correlated with that of the B1 field. This spatial correlation between the fields allows Bz-based compensation for the effects of B1 inhomogeneity. Successful operation over a wide bandwidth and range of B1 intensities may be achieved without any modification of the RF pulses. An alternative approach for compensating for B1 inhomogeneity is to apply a rapid oscillatory phase-modulation to an existing RF pulse waveform. This approach does not require an additional Bz field, but does not have the minimum RF power advantage of the first approach.

12 Claims, 26 Drawing figures

☐ 8. Document ID: US 6552544 B2 Relevance Rank: 92

L1: Entry 6 of 13 File: USPT Apr 22, 2003

US-PAT-NO: 6552544
DOCUMENT-IDENTIFIER: US 6552544 B2

TITLE: Detunable coil assembly and method of detuning RF coil for MRI

DATE-ISSUED: April 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wong; Wai Ha	San Jose	CA		
Rath; Alan R.	Fremont	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Varian, Inc.	Palo Alto	CA			02

APPL-NO: 09/828319 [PALM]
DATE FILED: April 5, 2001

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/322
US-CL-CURRENT: 324/318; 324/322

FIELD-OF-SEARCH: 324/318, 324/320, 324/322, 324/307, 324/309

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4638253	January 1987	Jaskolski et al.	324/311
4717881	January 1988	Flugan	
4725779	February 1988	Hyde et al.	
4763076	August 1988	Arakawa et al.	324/322
4812764	March 1989	Bendall	324/318
4833409	May 1989	Eash	324/318
5323113	June 1994	Cory et al.	324/307
5445153	August 1995	Sugie et al.	324/318
5453692	September 1995	Takahashi et al.	324/318
5585721	December 1996	Datsikas	324/318
5898306	April 1999	Liu et al.	324/318
5903150	May 1999	Roznitzky	324/318
6137291	October 2000	Mitamura et al.	336/150
6198962	March 2001	Su	324/318

6211677 April 2001 Burl et al.

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
01094834	April 1989	JP	
01213559	August 1989	JP	

OTHER PUBLICATIONS

Stewart C. Bushong; Magnetic Resonance Imaging physical and biological principles; second edition; 1996, Chapter 12, pp. 144-158).*
Article by C.E. Hayes, et al., entitled "An Efficient, Highly Homogeneous Radiofrequency Coil for Whole-Body NMR Imaging at 1.5T" published in Journal of Magnetic Resonance, 63, pp. 622-628 (1985).
Yoda Kiyoshi, High Frequency Probe for NMR and NMR signal measuring method Jun. 10, 1987, Patent Abstract of Japan pp. 1-16.*
Yoda Kiyoshi, Probe for NMR and its adjusting method Feb. 23, 1988, Patent Abstract of Japan pp. 1-12.

ART-UNIT: 2862

PRIMARY-EXAMINER: Lefkowitz; Edward

ASSISTANT-EXAMINER: Varges; Dixomara

ATTY-AGENT-FIRM: Fishman; Bella Berkowitz; Edward H.

ABSTRACT:

A detunable coil assembly includes a main coil which resonates at a specified resonance frequency and a switchable detuning coil which, when switched on, becomes inductively coupled to the main coil and serves to detune it from its resonance frequency. The detuning coil and the main coil are electrically insulated from each other. The main coil may be of a multiply tuned kind and it may be detuned from more than one of its specified resonance frequencies at the same time by switching on the detuning coil.

13 Claims, 3 Drawing figures

☐ 9. Document ID: US 6556010 B2 Relevance Rank: 92

L1: Entry 5 of 13 File: USPT Apr 29, 2003

US-PAT-NO: 6556010
DOCUMENT-IDENTIFIER: US 6556010 B2

TITLE: Magnetic resonance imaging method involving sub-sampling

DATE-ISSUED: April 29, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Van Den Brink; Johan Samuel	Eindhoven			NL
Cohen; Julius Simon	Eindhoven			NL

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Koninklijke Philips Electronics N.V.	Eindhoven			NL	03

APPL-NO: 09/880209 [PALM]
DATE FILED: June 13, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
EP	00202082	June 15, 2000

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/309; 324/307
US-CL-CURRENT: 324/309; 324/307

FIELD-OF-SEARCH: 324/309, 324/307, 324/306, 324/312, 324/314, 324/300

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5027070	June 1991	Higuchi	324/309
5307014	April 1994	Laub	324/306
5323113	June 1994	Cory et al.	324/307

ART-UNIT: 2862

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: Vodopia; John

ABSTRACT:

A magnetic resonance imaging system is provided with a system of emission antennas,: for example, emission coils, for generating RF excitation pulses. The RF excitation pulses generate magnetic resonance signals from an object to be examined. The system of emission antennas has a spatially inhomogeneous emission profile. The inhomogeneous emission profile is used for the partial spatial encoding of the magnetic resonance signals in addition to the encoding on the basis of magnetic gradient fields. The magnetic resonance image is reconstructed on the basis of the inhomogeneous emission profile

20 Claims, 1 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 10. Document ID: US 6590392 B2 Relevance Rank: 92

L1: Entry 4 of 13 File: USPT Jul 8, 2003

US-PAT-NO: 6590392
DOCUMENT-IDENTIFIER: US 6590392 B2
** See image for Certificate of Correction **

TITLE: Switchable FOV coil assembly having end saddle coils

DATE-ISSUED: July 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boskamp; Ed B.	Menomonee Falls	WI		
Weyers; Daniel J.	Wauwatosa	WI		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
GE Medical Systems Global Technology Co., LLC	Waukesha	WI			02

APPL-NO: 09/681498 [PALM]
DATE FILED: April 17, 2001

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/322, 324/307
US-CL-CURRENT: 324/318; 324/307, 324/322

FIELD-OF-SEARCH: 324/318, 324/322, 324/320, 324/309, 324/307

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4835472	May 1989	Zabel et al.	324/318
4996481	February 1991	Ackerman et al.	324/318
5323113	June 1994	Cory et al.	324/318
5689187	November 1997	Marek et al.	324/318
5929639	July 1999	Doty	324/318
6487436	November 2002	Boskamp et al.	600/422

ART-UNIT: 2859

PRIMARY-EXAMINER: Gutierrez; Diego

ASSISTANT-EXAMINER: Vargas; Dixomara

ATTY-AGENT-FIRM: Ziolkowski Patent Solutions Group, LLC Della Penna; Michael A. Horton; Carl B.

ABSTRACT:

An MRI apparatus and method for minimizing mutual inductance between a center coil and an end coil configuration that reduces wrap-around artifacts in an MR image is provided. The switchable FOV coil configuration includes first and second RF coils aligned along a first axis. The second RF coil is coupled to the first RF coil to form a pair of end saddle coils. A central RF coil is also included having a length along the first axis and positioned at least partially within the end saddle coils such that activation of the central RF coil alone or in combination with the end saddle coils provides differing FOV's for imaging.

31 Claims, 6 Drawing figures

☐ 11. Document ID: US 5521504 A Relevance Rank: 89

L1: Entry 11 of 13 File: USPT May 28, 1996

US-PAT-NO: 5521504
DOCUMENT-IDENTIFIER: US 5521504 A

TITLE: Pulse sequence and method for creating a radio-frequency magnetic field gradient with a spatially independent phase for NMR experiments

DATE-ISSUED: May 28, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cory; David G.	Winchester	MA		
Laukien; Frank H.	Lincoln	MA		
Maas; Werner E.	Billerica	MA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Bruker Instruments, Inc.	Billerica	MA			02

APPL-NO: 08/177761 [PALM]
DATE FILED: January 4, 1994

INT-CL: [06] G01 V 3/00

US-CL-ISSUED: 324/309; 324/307
US-CL-CURRENT: 324/309; 324/307

FIELD-OF-SEARCH: 324/307, 324/309, 324/310, 324/311, 324/312

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5229718	July 1993	Cory	324/309
5260655	November 1993	Cory	324/309
5327087	July 1994	Hafner et al.	324/307

ART-UNIT: 225

PRIMARY-EXAMINER: Arana; Louis M.

ATTY-AGENT-FIRM: Bookstein & Kudirka

ABSTRACT:

A composite RF pulse is created from a sequence of conventional homogeneous RF pulses and conventional gradient RF pulses and the composite pulse generates a gradient magnetic field with a spatially varying amplitude, but a spatially independent phase. In one embodiment of the invention, the pulse sequence consists of four conventional gradient RF pulses interspersed with two conventional homogeneous RF pulses. In another embodiment of the invention, a conventional gradient RF pulse is combined with a conventional homogeneous RF pulse and the pulse pair is repeated in order to generate an effective magnetic field with a spatially varying amplitude, but a spatially independent phase.

6 Claims, 11 Drawing figures

☐ 12. Document ID: US 20020130661 A1 Relevance Rank: 89

L1: Entry 2 of 13 File: PGPB Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020130661
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020130661 A1

TITLE: Nuclear magnetic resonance analysis of multiple samples

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Raftery, Daniel	Lafayette	IN	US
Fisher, George G.	Oak Harbor	WA	US
Petucci, Christopher J.	Memphis	TN	US
McNamara, Ernesto	Alexandria	VA	US

APPL-NO: 09/938996 [PALM]
DATE FILED: August 24, 2001

RELATED-US-APPL-DATA:
child 09938996 A1 20010824
parent continuation-of PCT/US00/04842 20000225 US UNKNOWN
non-provisional-of-provisional 60121869 19990226 US

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/321, 324/322, 324/309
US-CL-CURRENT: 324/318; 324/309, 324/321, 324/322

REPRESENTATIVE-FIGURES: 1 2 6

ABSTRACT:

A Nuclear Magnetic Resonance (NMR) probe device (20) is disclosed. NMR probe device (20) includes a plurality of detection coils (30, 40) each operable to detect a signal from a corresponding one of a plurality of samples (34, 44) undergoing NMR analysis. Also included is a plurality of tuning circuits (31, 41, 38, 48) each coupled to one of detection coils (30, 40) to tune the one of the detection coils (30, 40) to a corresponding resonant frequency for the NMR analysis of the corresponding one of the samples. An electromagnetic shield (22) is positioned between a first one of the detection coils (30, 40) and a second one of the detection coils (30, 40) to isolate the first one of the detection coils (30, 40) and the second one of the detection coils (30, 40) from each other.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of United States Provisional Patent Application No. 60/121,869, filed Feb. 26, 1999, which is hereby incorporated by reference in its entirety.

☐ 13. Document ID: US 20040164738 A1 Relevance Rank: 89

L1: Entry 1 of 13 File: PGPB Aug 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040164738
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040164738 A1

TITLE: Nuclear magnetic resonance analysis of multiple samples

PUBLICATION-DATE: August 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Raftery, Daniel	Lafayette	IN	US
McNamara, Ernesto	Alexandria	VA	US

APPL-NO: 10/785918 [PALM]
DATE FILED: February 24, 2004

RELATED-US-APPL-DATA:
child 10785918 A1 20040224
parent division-of 09938996 20010824 US GRANTED
parent-patent 6696838 US
child 09938996 20010824 US
parent continuation-of PCT/US00/04842 20000225 US PENDING
non-provisional-of-provisional 60121869 19990226 US

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/321
US-CL-CURRENT: 324/321

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

A Nuclear Magnetic Resonance (NMR) probe device (20) is disclosed. NMR probe device (20) includes a plurality of detection coils (30, 40) each operable to detect a signal from a corresponding one of a plurality of samples (34, 44) undergoing NMR analysis. Also included is a plurality of tuning circuits (31, 41, 38, 48) each coupled to one of detection coils (30, 40) to tune the one of the detection coils (30, 40) to a corresponding resonant frequency for the NMR analysis of the corresponding one of the samples. An electromagnetic shield (22) is positioned between a first one of the detection coils (30, 40) and a second one of the detection coils (30, 40) to isolate the first one of the detection coils (30, 40) and the second one of the detection coils (30, 40) from each other.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of provisional patent application No. 60/121,869, filed Feb. 26, 1999, which is hereby incorporated by reference; and is a continuation of application No. PCT/US00/04842, filed Feb. 25, 2000; and is a division of application Ser. No. 09/938,996, filed Aug. 24, 2001, now U.S. Pat. No. 6,696,838, which is hereby incorporated by reference.

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